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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
19720 GSRS, MISSILE NUMBERS 001 AND 002, ROUND NUMBER B-12 AND --ETC(U)
MAY 79

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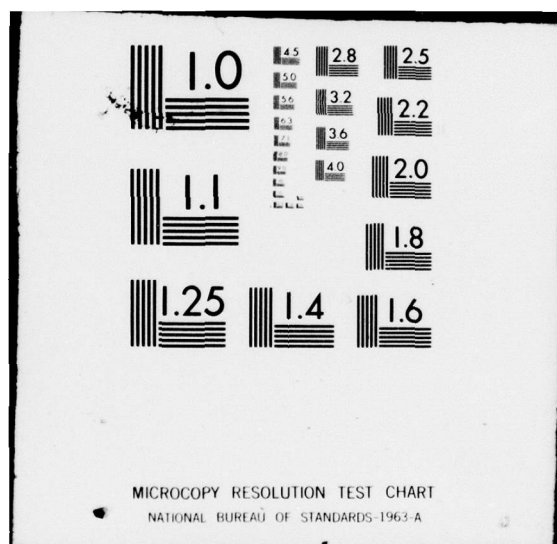
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METEOROLOGICAL DATA REPORT

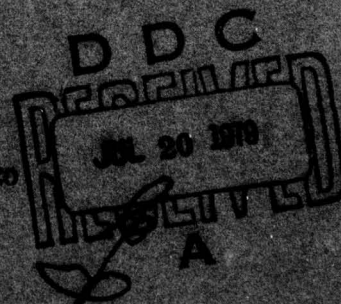
19702 65RS
Missile No. 001 & 002
Round No. B-12 & B-13
3 May 1979
by

MSMR Meteorological Team

LEVEL II

DDC FILE COPY

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO



ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) 12 23 p. 6 19702 GSRS, Missile Numbers 001 and 002, Round Number B-12 and B-13, 3 May 1979.		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		9 Meteorological data rept.
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → Meteorological data gathered for the launching of 19702 GSRS, Missile Numbers 001 and 002, Round Numbers B-12 and B-13, are presented in tabular form. 420 663		

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By _____	
Distribution/ _____	
Availability Codes	
Dist.	Availand/or special
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INTRODUCTION

19702B GSRS, Missile Numbers 001 and 002, Round Numbers B-12 and B-13, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0820 and 0820:04 MDT, 3 May 1979. The scheduled launch times were 0820 and 0820:04 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

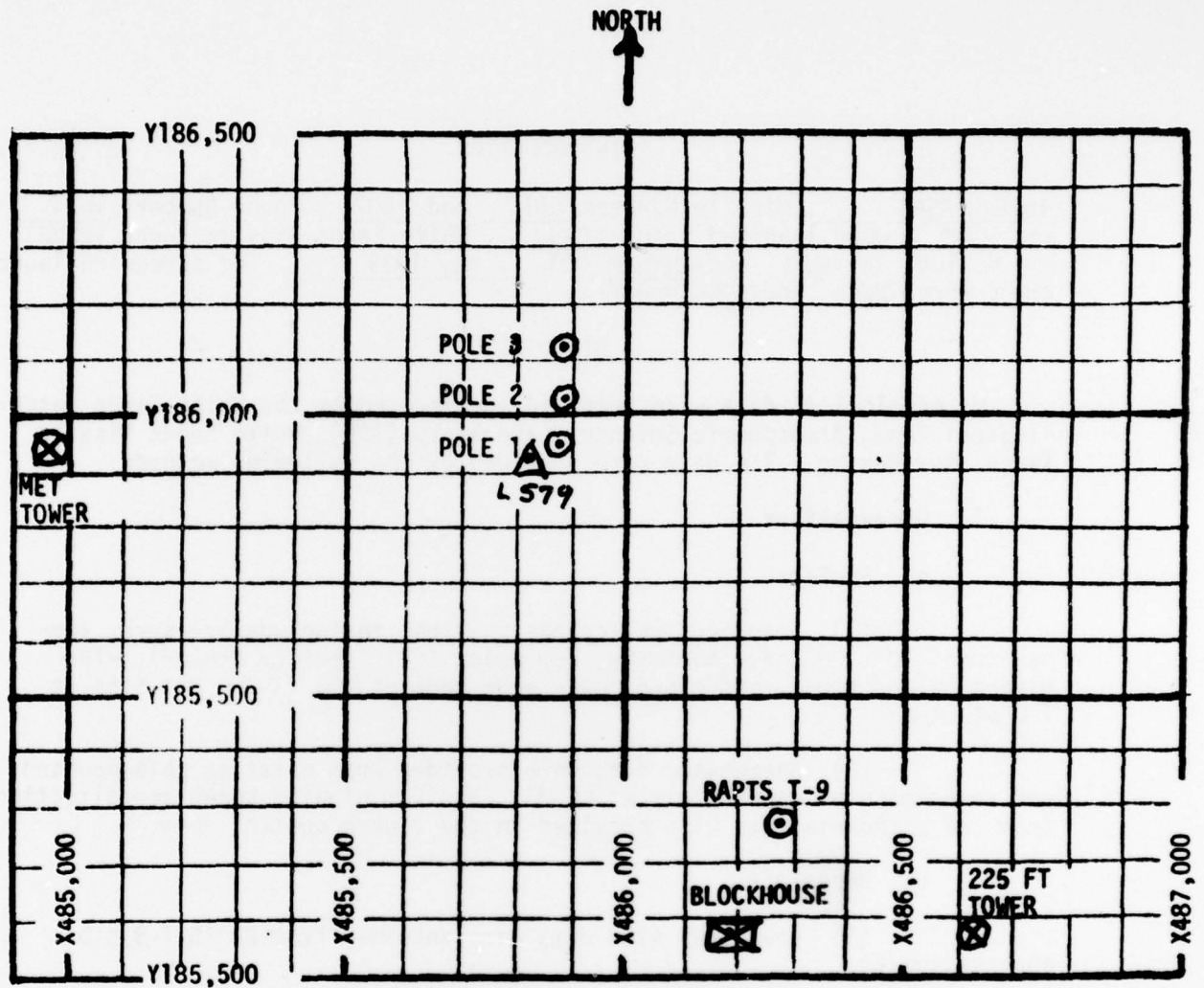
LC-33 1080 meters (30-meter increments)

LC-33 1080 meters (30-meter increments)

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 103,500 feet in 500-foot increments.

SITE AND TIME

SMR 0720 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

The data are presented in the following tabulations:

ELEVATION	3977.30	FT/MSL
PRESSURE	876.8	MBS
TEMPERATURE	17.0	°C
RELATIVE HUMIDITY	29	%
DEW POINT	-1.1	°C
DENSITY	1048	GM/M ³
WIND SPEED	7	MPH
WIND DIRECTION	255	DEGREES
CLOUD COVER	1	Cu
CLOUD COVER	1	Sc

TABLE I. SURFACE OBSERVATIONS TAKEN AT 0820 MDT, 3 MAY 1979
AT LC-33, 19702B GSRs, MISSILE NO. 001 AND 002,
ROUND NO. B-12 AND B-13.

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	272	18	-30	287	14	-30	267	23
-20	278	17	-20	287	13	-20	282	20
-10	282	18	-10	302	15	-10	283	18
0.0	278	13	0.0	290	13	0.0	275	21
+10	285	15	+10	309	11	+10	287	19

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

TABLE II

TYPE 19702B GSRS MISSILE NO. 001 & 002 POUND NO. B-12 & B-13

LAUNCHED FROM LC-33 DATE 3 May 1979 TIME 0820/0820:04MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE TYPING AZIMUTH: _____

OR TRUE NORTH TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1 12 ft			LEVEL #2 62 ft		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	265	12	-30	275	17
-20	292	9	-20	275	15
-10	282	10	-10	275	16
0.0	296	12	0.0	280	17
+10	279	12	+10	275	14
LEVEL #3 102 ft			LEVEL #4 202 ft		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	287	18	-30	274	19
-20	288	19	-20	273	18
-10	290	17	-10	280	17
0.0	290	18	0.0	276	14
+10	299	15	+10	280	18

WTSM COORDINATES: X484,32.64 Y185,957.73 H3983.00 (base)

TABLE III

TYPE 19702B GSRS MISSILE NO. 001 & 002 ROUND NO. B-12 & B-13

LAUNCHED FROM LC-33 DATE 3 May 1979 TIME 0820 & 0820:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH

OR TRUE NORTH TRUE NORTH

PILOT BALLOON MEASURED WIND DATA
(30 meter increments)

TABLE IV

RELEASED FROM LC-33 DATE 3 May 1979 TIME 0810 MDT

RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30

MISSILE TYPE 19702B GSRS MISSILE NO. 001 & 002 ROUND NO. B-12 & B-13

MISSILE LAUNCHED FROM LC-33 DATE 3 May 1979 TIME 0820 & 0820:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH _____

OR TRUE NORTH TRUE NORTH.

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	250	10.0
30	261	10.5
60	271	11.0
90	281	11.5
120	291	11.5
150	291	12.0
180	291	12.0
210	291	12.5
240	291	12.5
270	289	13.0
300	287	13.0
330	285	13.0
360	282	13.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	283	14.0
420	283	15.0
450	284	16.0
480	284	16.5
510	284	16.5
540	284	16.5
570	284	16.5
600	283	16.0
630	282	15.5
660	280	15.0
690	279	14.5
720	277	13.5
750	277	15.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	277	16.0
810	277	17.5
840	277	18.5
870	276	18.0
900	275	17.5
930	274	17.0
960	272	16.0
990	273	16.5
1020	274	16.5
1050	275	16.5
1080	276	16.5
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

PILOT BALLOON MEASURED WIND DATA
(30 meter increments)

TABLE V

RELEASED FROM LC-33 DATE 3 May 1979 TIME 0820 MDT
 RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30
 MISSILE TYPE 19702B GSRS MISSILE NO. 001 & 002 ROUND NO. B-12 & B-13
 MISSILE LAUNCHED FROM LC-33 DATE 3 May 1979 TIME 0820 & 0820:04 MDT
 NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH _____
 OR TRUE NORTH TRUE NORTH

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	255	7.0
30	263	7.5
60	270	7.5
90	277	8.0
120	284	8.0
150	286	11.5
180	287	15.0
210	289	18.5
240	290	22.0
270	290	22.0
300	290	22.0
330	290	22.0
360	289	22.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	288	22.0
420	287	21.5
450	286	21.5
480	285	21.0
510	284	21.0
540	283	20.5
570	282	20.5
600	280	20.0
630	280	19.5
660	279	18.5
690	279	18.0
720	278	17.0
750	276	17.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	274	17.0
810	272	17.0
840	269	16.5
870	269	16.5
900	269	16.5
930	269	16.5
960	268	16.0
990	266	16.5
1020	264	17.0
1050	262	17.5
1080	260	18.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

SIGNIFICANT LEVEL DATA
1230060086
S M R

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	MSL FEET	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
874.8	3997.3	16.5	25.0
850.0	4795.6	13.3	25.0
811.3	6073.3	9.5	31.0
732.3	8921.9	1.0	45.0
700.0	10007.1	-2.0	43.0
684.3	10598.7	-2.9	32.0
621.8	13071.0	-7.4	18.0
545.3	16385.7	-14.6	22.0
500.0	18521.1	-20.5	25.0
468.3	20102.8	-24.5	26.0
424.3	22438.8	-30.4	24.0
400.0	23811.0	-33.0	26.0
369.8	25615.9	-36.2	23.0
333.5	27952.0	-41.0	
320.3	28855.4	-41.2	
300.0	30310.3	-44.2	
285.9	31369.9	-45.6	
284.1	31508.6	-45.2	
259.3	33499.1	-49.2	
250.0	34291.1	-47.5	
227.8	36306.5	-49.5	
211.5	37907.5	-49.8	
207.9	38279.0	-48.0	
200.0	39119.8	-48.5	
192.3	39957.6	-50.3	
163.6	43422.8	-53.1	
157.2	44273.7	-51.5	
150.0	45274.7	-52.6	
136.8	47220.6	-56.2	
125.8	48976.0	-56.5	
109.0	53726.3	-61.4	
88.4	56280.2	-56.3	
70.0	61127.1	-60.4	
55.3	65965.8	-61.5	
50.0	68046.7	-57.9	
43.0	71186.8	-58.2	
41.7	71830.3	-55.0	
35.8	75046.7	-55.8	
30.0	78813.0	-50.5	
25.2	92572.7	-53.7	

STATION ALTITUDE 3997.30 FEET MSL
 3 MAY 79 0720 HRS MST
 ASCENSION NO. 86

SIGNIFICANT LEVEL DATA
 1230060086
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
20.0 87636.7	-43.5	
16.3 92203.6	-42.4	
14.8 94580.0	-39.1	
11.5 10072.2	-42.2	
10.0 103216.8	-40.6	
9.8 103673.1	-40.5	

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

UPPER AIR DATA
1230660096
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	874.8	16.5	-3.6	25.0	1050.0	663.7	230.0	9.9
4000.0	874.7	16.5	-3.6	25.0	1049.9	663.7	230.1	9.9
4500.0	859.1	14.5	-5.3	25.0	1038.6	661.3	240.8	10.8
5000.0	843.7	12.7	-6.3	26.0	1026.5	659.2	249.6	12.0
5500.0	823.4	11.2	-6.5	28.3	1013.2	657.5	256.8	13.4
6000.0	813.5	9.7	-6.7	30.7	1000.1	655.8	262.3	13.9
6500.0	798.5	8.2	-7.0	33.2	987.1	654.0	267.5	13.8
7000.0	783.8	6.6	-7.5	35.7	974.2	652.2	268.3	13.4
7500.0	769.3	5.1	-7.9	38.3	961.6	650.4	268.9	13.9
8000.0	755.1	3.5	-8.5	40.8	949.1	648.5	268.9	16.3
8500.0	741.1	2.0	-9.1	43.4	936.9	646.7	269.9	18.1
9000.0	727.4	.5	-10.1	44.7	924.4	645.0	271.5	19.5
9500.0	713.6	-.7	-11.5	43.9	911.3	643.5	273.8	21.0
10000.0	700.2	-2.0	-12.9	43.0	898.4	641.9	274.1	22.8
10500.0	686.9	-2.7	-16.4	33.8	884.1	640.9	270.7	25.8
11000.0	673.7	-3.6	-18.7	29.7	870.2	639.8	263.9	27.7
11500.0	660.8	-4.5	-20.7	26.9	856.5	638.7	256.6	29.6
12000.0	648.1	-5.5	-22.7	24.1	843.0	637.6	250.5	30.7
12500.0	635.7	-6.4	-24.9	21.2	829.7	636.5	247.5	32.4
13000.0	623.5	-7.3	-27.2	18.4	816.6	635.4	246.8	34.2
13500.0	611.3	-8.3	-28.0	18.5	803.9	634.1	248.6	36.4
14000.0	599.3	-9.4	-28.6	19.1	791.4	632.8	250.8	38.7
14500.0	587.6	-10.5	-29.2	19.7	779.1	631.5	250.1	38.9
15000.0	576.1	-11.6	-29.8	20.3	767.0	630.2	249.4	39.1
15500.0	564.8	-12.7	-30.4	20.9	755.1	628.8	247.8	39.1
16000.0	553.7	-13.8	-31.0	21.5	743.4	627.5	246.2	39.2
16500.0	542.8	-14.9	-31.7	22.2	732.0	626.1	244.6	40.5
17000.0	531.9	-16.3	-32.6	22.9	721.2	624.4	243.0	41.8
17500.0	521.2	-17.7	-33.5	23.6	710.5	622.8	240.2	41.7
18000.0	510.7	-19.1	-34.4	24.3	700.0	621.1	237.4	41.7
18500.0	500.4	-20.4	-35.3	25.0	689.7	619.4	235.7	41.1
19000.0	490.2	-21.7	-36.2	25.3	679.0	617.8	234.0	40.5
19500.0	480.1	-23.0	-37.2	25.6	668.5	616.3	232.6	40.4
20000.0	470.3	-24.2	-38.2	25.9	658.1	614.7	231.1	40.5
20500.0	460.5	-25.5	-39.4	25.7	647.7	613.1	229.5	41.3
21000.0	450.9	-26.8	-40.7	25.2	637.4	611.5	228.0	42.4
21500.0	441.5	-28.0	-41.9	24.8	627.3	610.0	226.7	43.5
22000.0	432.2	-29.3	-43.2	24.4	617.4	608.4	226.1	44.5
22500.0	423.2	-30.5	-44.4	24.1	607.5	606.9	226.1	45.9
23000.0	414.2	-31.5	-44.9	24.9	595.0	605.7	227.1	48.3

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

UPPER AIR DATA
1230060000
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	405.4	-32.4	-45.5	25.5	586.6	604.5	225.6	49.4	1.000131
24000.0	396.7	-33.3	-46.3	25.7	576.2	603.3	223.2	50.1	1.000129
24500.0	388.2	-34.2	-47.3	24.9	566.0	602.2	220.1	51.1	1.000127
25000.0	379.8	-35.1	-48.4	24.0	555.8	601.1	217.0	52.2	1.000124
25500.0	371.7	-36.0	-49.5	23.2	545.9	600.0	216.0	53.6	1.000122
26000.0	363.6	-37.0	-51.9	19.2**	536.3	598.7	215.2	55.0	1.000120
26500.0	355.6	-38.0	-55.2	14.3**	526.9	597.4	215.4	56.4	1.000118
27000.0	347.8	-39.0	-59.4	9.4**	517.6	596.1	215.7	57.8	1.000115
27500.0	340.2	-40.1	-65.8	4.4**	508.5	594.8	216.8	59.3	1.000113
28000.0	332.8	-41.0			499.4	593.6	218.1	60.8	1.000111
28500.0	325.4	-41.1			488.6	593.4	219.0	61.3	1.000109
29000.0	318.2	-41.5			478.6	592.9	219.4	60.4	1.000107
29500.0	311.1	-42.5			470.0	591.6	219.8	59.4	1.000105
30000.0	304.2	-43.6			461.6	590.3	220.5	58.2	1.000103
30500.0	297.4	-44.5			453.1	589.2	221.5	57.7	1.000101
31000.0	290.7	-45.1			444.2	588.3	223.2	58.6	1.000099
31500.0	284.2	-45.2			434.4	588.2	225.0	59.2	1.000097
32000.0	277.8	-46.2			426.3	586.9	227.0	59.6	1.000095
32500.0	271.5	-47.2			418.5	585.6	228.8	58.8	1.000093
33000.0	265.3	-48.2			410.9	584.3	230.3	56.8	1.000092
33500.0	259.3	-49.2			403.3	583.0	231.5	54.7	1.000090
34000.0	253.4	-48.1			392.3	584.4	232.1	52.2	1.000087
34500.0	247.6	-47.7			382.6	584.9	232.5	50.5	1.000085
35000.0	242.0	-48.2			374.7	584.3	232.8	49.5	1.000083
35500.0	236.4	-48.7			367.0	583.7	233.3	49.0	1.000082
36000.0	231.0	-49.2			359.4	583.0	234.1	49.1	1.000080
36500.0	225.8	-49.5			351.7	582.6	235.5	49.0	1.000078
37000.0	220.6	-49.6			343.8	582.4	237.3	48.8	1.000077
37500.0	215.5	-49.7			336.1	582.3	239.7	48.4	1.000075
38000.0	210.6	-49.4			327.8	582.8	242.4	48.0	1.000073
38500.0	205.8	-48.1			318.6	584.4	244.8	47.2	1.000071
39000.0	201.1	-48.4			311.8	584.0	247.1	46.4	1.000069
39500.0	196.5	-49.3			305.8	582.9	249.2	45.4	1.000068
40000.0	192.0	-50.3			300.2	581.5	251.1	44.0	1.000067
40500.0	187.6	-50.7			293.8	581.0	253.1	42.7	1.000065
41000.0	183.2	-51.1			287.5	580.5	253.5	42.8	1.000064
41500.0	179.0	-51.5			281.4	579.9	254.0	42.9	1.000063
42000.0	174.9	-51.9			275.4	579.4	254.1	43.1	1.000061
42500.0	170.8	-52.4			269.5	578.9	254.1	43.3	1.000060
43000.0	166.9	-52.8			263.8	578.4	255.2	41.6	1.000059

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

UPPER AIR DATA
1230060080
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	163.0	-53.0			257.9	578.1	256.5	39.5	1.000057
44000.0	159.2	-52.0			250.8	579.3	258.9	35.7	1.000056
44500.0	155.5	-51.7			244.7	579.7	262.3	31.5	1.000055
45000.0	151.9	-52.3			239.7	579.0	264.7	29.1	1.000053
45500.0	148.4	-53.0			234.9	578.0	266.6	27.3	1.000052
46000.0	144.9	-53.9			230.3	576.8	266.7	27.4	1.000051
46500.0	141.5	-54.9			225.9	575.6	265.8	28.3	1.000050
47000.0	138.2	-55.8			221.6	574.4	265.1	29.1	1.000049
47500.0	135.0	-56.2			216.8	573.8	265.3	29.5	1.000048
48000.0	131.8	-56.3			211.8	573.6	265.5	29.8	1.000047
48500.0	128.7	-56.4			206.9	573.5	266.0	30.0	1.000046
49000.0	125.7	-56.5			202.1	573.4	266.8	30.2	1.000045
49500.0	122.7	-57.0			197.7	572.7	267.2	30.5	1.000044
50000.0	119.7	-57.6			193.5	572.0	266.7	31.1	1.000043
50500.0	116.9	-58.1			189.3	571.3	266.0	31.7	1.000042
51000.0	114.1	-58.6			185.2	570.7	263.6	32.7	1.000041
51500.0	111.4	-59.1			181.2	570.0	261.4	33.8	1.000040
52000.0	108.7	-59.6			177.3	569.3	259.4	34.3	1.000039
52500.0	106.1	-60.1			173.5	568.6	257.5	34.8	1.000039
53000.0	103.6	-60.7			169.8	567.9	255.6	35.1	1.000038
53500.0	101.1	-61.2			166.1	567.2	254.0	33.7	1.000037
54000.0	98.7	-60.9			161.9	567.6	252.1	32.4	1.000036
54500.0	96.3	-59.9			157.3	569.0	250.8	30.9	1.000035
55000.0	94.0	-58.9			152.9	570.3	250.0	29.1	1.000034
55500.0	91.8	-57.9			148.5	571.6	249.5	27.1	1.000033
56000.0	89.6	-56.9			144.3	572.9	251.4	23.9	1.000032
56500.0	87.5	-56.5			140.6	573.4	253.9	20.7	1.000031
57000.0	85.4	-56.9			137.6	572.9	257.3	16.3	1.000031
57500.0	83.4	-57.3			134.6	572.3	263.3	11.8	1.000030
58000.0	81.4	-57.8			131.6	571.8	269.6	9.0	1.000029
58500.0	79.4	-58.2			126.7	571.2	273.8	7.5	1.000029
59000.0	77.5	-58.6			125.9	570.6	279.9	6.1	1.000028
59500.0	75.7	-59.0			123.2	570.1	287.5	5.1	1.000027
60000.0	73.9	-59.4			120.5	569.5	298.1	4.3	1.000027
60500.0	72.1	-59.9			117.8	568.9	307.2	3.9	1.000026
61000.0	70.4	-60.3			115.3	568.4	316.0	3.6	1.000026
61500.0	68.7	-60.5			112.6	568.1	318.7	3.5	1.000025
62000.0	67.1	-60.6			110.0	568.0	306.4	3.8	1.000024
62500.0	65.5	-60.7			107.4	567.8	296.0	4.2	1.000024
63000.0	63.9	-60.8			104.8	567.7	237.8	4.4	1.000023

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

UPPER AIR DATA
1230060080
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.4	-60.9			102.4	567.5	280.5	4.7	1.000023
64000.0	60.9	-61.1			100.0	567.4	274.0	4.9	1.000022
64500.0	59.4	-61.2			97.6	567.2	267.7	5.0	1.000022
65000.0	58.0	-61.3			95.3	567.1	261.7	5.1	1.000021
65500.0	56.6	-61.4			93.1	566.9	262.0	3.8	1.000021
66000.0	55.2	-61.4			90.8	566.8	264.7	2.3	1.000020
66500.0	53.9	-60.6			88.3	568.0	280.0	.9	1.000020
67000.0	52.6	-59.7			85.8	569.2	37.7	.8	1.000019
67500.0	51.3	-58.8			83.5	570.3	59.2	2.1	1.000019
68000.0	50.1	-58.0			81.1	571.5	51.7	2.8	1.000018
68500.0	48.9	-57.9			79.2	571.5	41.2	3.3	1.000018
69000.0	47.8	-58.0			77.3	571.4	33.0	3.8	1.000017
69500.0	46.6	-58.0			75.5	571.4	18.2	3.5	1.000017
70000.0	45.5	-58.1			73.7	571.3	357.9	3.5	1.000016
70500.0	44.4	-58.1			72.0	571.3	343.7	3.7	1.000016
71000.0	43.4	-58.2			70.3	571.2	333.9	3.8	1.000016
71500.0	42.4	-56.6			68.2	573.2	325.1	4.1	1.000015
72000.0	41.4	-55.0			66.1	575.3	318.6	4.2	1.000015
72500.0	40.4	-55.2			64.6	575.2	308.1	4.2	1.000014
73000.0	39.4	-55.3			63.1	575.0	299.7	4.4	1.000014
73500.0	38.5	-55.4			61.6	574.9	279.1	5.4	1.000014
74000.0	37.6	-55.5			60.2	574.7	266.1	6.9	1.000013
74500.0	36.7	-55.7			58.9	574.5	259.1	8.3	1.000013
75000.0	35.9	-55.8			57.5	574.4	256.6	9.2	1.000013
75500.0	35.0	-55.2			56.0	575.2	254.5	10.1	1.000012
76000.0	34.2	-54.5			54.5	576.1	253.8	9.9	1.000012
76500.0	33.4	-53.8			53.1	577.0	254.0	8.8	1.000012
77000.0	32.7	-53.1			51.7	578.0	254.5	7.7	1.000012
77500.0	31.9	-52.3			50.3	578.9	254.5	6.7	1.000011
78000.0	31.2	-51.6			49.0	579.8	254.8	5.6	1.000011
78500.0	30.4	-50.9			47.7	580.7	255.2	4.5	1.000011
79000.0	29.7	-50.5			46.5	581.3	255.5	3.5	1.000010
79500.0	29.1	-50.5			45.5	581.3	256.1	2.4	1.000010
80000.0	28.4	-50.6			44.4	581.2	256.3	1.5	1.000010
80500.0	27.7	-50.6			43.4	581.2	250.1	1.7	1.000010
81000.0	27.1	-50.6			42.4	581.2	245.2	1.9	1.000009
81500.0	26.5	-50.6			41.5	581.1	236.4	2.2	1.000009
82000.0	25.9	-50.7			40.5	581.1	217.5	3.4	1.000009
82500.0	25.3	-50.7			39.6	581.1	208.9	4.7	1.000009
83000.0	24.7	-50.1			38.0	581.9	201.0	6.1	1.000009

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

UPPER AIR DATA
1230060000
S M R

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
8350.0	24.2	-49.4		37.6	582.8	183.4	7.4	1.000008
8400.0	23.6	-48.7		36.6	583.7	171.9	9.2	1.000008
8450.0	23.1	-48.0		35.7	584.6	159.7	11.0	1.000008
8500.0	22.6	-47.2		34.8	585.5	149.3	11.2	1.000008
8550.0	22.0	-46.5		33.9	586.5	137.8	11.5	1.000008
8600.0	21.6	-45.8		33.0	587.4	126.7	11.7	1.000007
8650.0	21.1	-45.1		32.2	588.3	115.0	11.4	1.000007
8700.0	20.6	-44.4		31.4	589.2	103.4	11.5	1.000007
8750.0	20.1	-43.7		30.6	590.1	91.1	11.8	1.000007
8800.0	19.7	-43.4		29.8	590.5	79.2	11.8	1.000007
8850.0	19.2	-43.3		29.2	590.8	67.4	11.7	1.000006
8900.0	18.8	-43.2		28.5	590.8	55.0	11.7	1.000006
8950.0	18.4	-43.1		27.9	591.0	42.1	10.2	1.000006
9000.0	18.0	-42.9		27.2	591.1	29.8	9.0	1.000006
9050.0	17.6	-42.8		26.6	591.3	17.4	8.3	1.000006
9100.0	17.2	-42.7		26.0	591.4	5.0	8.1	1.000006
9150.0	16.8	-42.6		25.4	591.6	22.3	7.9	1.000006
9200.0	16.4	-42.4		24.8	591.7	9.7	7.8	1.000006
9250.0	16.1	-42.0		24.2	592.4	262.0	7.3	1.000005
9300.0	15.7	-41.2		23.6	593.3	254.1	6.8	1.000005
9350.0	15.4	-40.4		23.0	594.3	244.3	6.4	1.000005
9400.0	15.1	-39.7		22.5	595.3	240.9	5.7	1.000005
9450.0	14.7	-39.2		21.9	595.9	240.9	4.8	1.000005
9500.0	14.4	-39.4		21.5	595.6	240.9	4.0	1.000005
9550.0	14.1	-39.7		21.0	595.2	245.2	4.2	1.000005
9600.0	13.8	-40.0		20.6	594.9	250.3	5.5	1.000005
9650.0	13.5	-40.3		20.2	594.5	253.5	6.8	1.000004
9700.0	13.2	-40.5		19.7	594.2	255.6	8.0	1.000004
9750.0	12.9	-40.8		19.3	593.8	257.2	8.8	1.000004
9800.0	12.6	-41.1		18.9	593.5	258.4	9.7	1.000004
9850.0	12.3	-41.3		18.5	593.1	259.5	10.6	1.000004
9900.0	12.1	-41.6		18.1	592.8	260.1	11.2	1.000004
9950.0	11.8	-41.9		17.8	592.4	260.0	11.3	1.000004
10000.0	11.5	-42.2		17.4	592.1	259.9	11.4	1.000004
10050.0	11.3	-42.0		17.0	592.3	259.8	11.5	1.000004
10100.0	11.0	-41.7		16.6	592.6			1.000004
10150.0	10.8	-41.5		16.2	593.0			1.000004
10200.0	10.6	-41.2		15.9	593.3			1.000004
10250.0	10.3	-41.0		15.5	593.0			1.000003
10300.0	10.1	-40.7		15.1	594.0			1.000003

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STATION ALTITUDE 3997.30 FEET MSL
 3 MAY 79 0720 HRS MST
 ASCENSION NO. 80

MRN SIGNIFICANT LEVEL DATA
 1230060066
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA		E-W MPS	DEW PT DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	N-S MPS			AIR DEG C		
3143.	9999.**	9999.**	-9999.**	-9999.**	99	-40.5		9.800+0
3129.	9999.**	9999.**	-9999.**	-9999.**	99	-40.6		1.000+1
3034.	260.	6.	1.	0.	99	-42.2		1.150+1
2862.	241.	3.	1.	2.	99	-39.1		1.480+1
2797.	267.	4.	0.	4.	99	-42.4		1.630+1
2659.	205.	6.	6.	3.	99	-43.5		2.000+1
2506.	208.	3.	2.	1.	99	-50.7		2.520+1
2392.	255.	2.	1.	2.	99	-50.5		3.000+1
2278.	256.	5.	1.	5.	99	-55.8		3.580+1
2181.	320.	2.	-2.	1.	99	-55.0		4.170+1
2161.	330.	2.	-2.	1.	99	-58.2		4.300+1
2066.	51.	1.	-1.	-1.	99	-57.9		5.000+1
2003.	264.	1.	0.	1.	99	-61.5		5.530+1
1857.	318.	2.	-1.	1.	99	-60.4		7.000+1
1710.	253.	11.	3.	11.	99	-56.3		8.840+1
1633.	253.	17.	5.	16.	99	-61.4		1.000+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

MANDATORY LEVELS
1230060080
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL HUM.		WINJ DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4792.	13.3	-6.3	25.	246.2	11.4	
800.0	6449.	8.3	-7.0	33.	267.0	13.8	
750.0	8181.	3.0	-8.7	42.	268.9	17.1	
700.0	9997.	-2.0	-12.9	43.	274.0	22.9	
650.0	11919.	-5.3	-22.4	24.	251.4	30.5	
600.0	13965.	-9.4	-28.6	19.	250.4	38.7	
550.0	16151.	-14.1	-31.3	22.	245.7	39.7	
500.0	18496.	-20.5	-35.3	25.	235.6	41.1	
450.0	21022.	-26.9	-40.8	25.	227.9	42.5	
400.0	23772.	-33.0	-45.9	26.	224.2	49.8	
350.0	26818.	-38.8	-56.1	11.**	215.6	57.4	
300.0	30251.	-44.2			220.9	57.5	
250.0	34218.	-47.5			232.4	50.9	
200.0	39027.	-48.5			247.5	46.2	
175.0	41883.	-51.9			254.1	43.0	
150.0	45154.	-52.6			265.6	28.2	
125.0	48970.	-56.6			266.9	30.2	
100.0	53562.	-61.4			253.3	33.2	
80.0	58173.	-58.1			272.2	8.0	
70.0	60919.	-60.4			317.8	3.6	
60.0	64065.	-61.1			270.7	5.0	
50.0	67792.	-57.9			51.4	2.8	
40.0	72421.	-55.2			305.2	4.3	
30.0	78478.	-50.5			255.3	3.9	
25.0	82377.	-50.5			206.6	5.3	
20.0	87227.	-43.5			204.7	11.8	
15.0	93607.	-39.6			240.9	5.7	
10.0	102658.	-40.6					

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
3 MAY 79 0720 HRS MST
ASCENSION NO. 86

MRN MANDATORY LEVELS
1230060086
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOPOTENTIAL ALTITUDE UECAMETERS	DIRECTION DEG (TN)	SPEED MPS	WIND DATA N-S MPS	E-W MPS	DEW PT DEG C	TEMPERATURE AIR DEG C	PRESSURE MILLIBARS
3129.	9999.**	9999.**	-9999.**	-9999.**	99	-40.6	1.000+1
2853.	241.	3.	1.	3.	99	-39.6	1.500+1
2659.	205.	6.	6.	3.	99	-43.5	2.000+1
2511.	207.	3.	2.	1.	99	-50.5	2.500+1
2392.	255.	2.	1.	2.	99	-50.5	3.000+1
2207.	305.	2.	-1.	2.	99	-55.2	4.000+1
2066.	51.	1.	-1.	-1.	99	-57.9	5.000+1
1953.	271.	3.	-0.	3.	99	-61.1	6.000+1
1857.	318.	2.	-1.	1.	99	-60.4	7.000+1
1773.	272.	4.	-0.	4.	99	-58.1	8.000+1
1633.	253.	17.	5.	16.	99	-61.4	1.000+2
1493.	267.	16.	1.	16.	99	-56.6	1.250+2
1376.	266.	14.	1.	14.	99	-52.6	1.500+2
1277.	254.	22.	0.	21.	99	-51.9	1.750+2
1190.	248.	24.	9.	22.	99	-48.5	2.000+2
1043.	232.	26.	16.	21.	99	-47.5	2.500+2
922.	221.	30.	22.	19.	99	-44.2	3.000+2
817.	216.	30.	24.	17.	19	-38.8	3.500+2
725.	228.	26.	18.	16.	13	-33.0	4.000+2
641.	224.	22.	15.	16.	14	-26.9	4.500+2
564.	236.	21.	12.	17.	15	-20.5	5.000+2
492.	246.	20.	8.	19.	17	-14.1	5.500+2
426.	251.	20.	7.	19.	19	-9.4	6.000+2
363.	251.	16.	5.	15.	17	-5.3	6.500+2
305.	274.	12.	-1.	12.	11	-2.0	7.000+2
249.	269.	9.	0.	9.	12	3.0	7.500+2
197.	267.	7.	0.	7.	15	8.3	8.000+2
146.	246.	6.	2.	5.	20	13.3	8.500+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.